Cooperative Learning & Instructional Video: An Exploration on its Effects on Student Engagement

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Abstract: A traditional teaching method is predominately used in public school classrooms on the island of ‘Oahu, Hawai’i. This method requires students to recite facts, memorize procedures, and recall information. Educators need to reevaluate if traditional methods of instruction have any motivational value for students. Young students in the United States live in a world in which video, either accessed online or via television, is their source of information and motivation. The purpose of this action research project was to explore the use of video to enhance cooperation among my students at a public school on ‘Oahu.

Statement of Problem

In the traditional classroom, a common task for students may be to memorize information to later recall on an assessment. In these settings, the teacher is seen as omnipotent and the ultimate holder of knowledge. Educators must evaluate if this traditional method of teaching has any motivational value for students. In weekly faculty meetings, educators question student’s motivation to turn in assignments. My personal observations also reveal that students attend school without meaningful connection to their peers in the classroom. These commonplace occurrences prompted me to dig deeper and explore the root of this issue. One reason students may be behaving this way is that they are not intrinsically motivated or engaged to learn.

One way to help boost student motivation is to draw upon pedagogy such as the constructivist learning theory. This method of learning encourages a cooperative approach where students are actively taking part in the learning process (Fernando & Marikar, 2017). Rather than having students learn at a superficial level, cooperative learning creates an environment where students learn content on a deeper level. The theorist Vygotsky believed that cooperative activity among students contributed to social growth because students of similar ages are interacting with one another (Johnson & Johnson, 2014). Teaching students to effectively communicate with each other is the foundation to cooperative learning. When students feel comfortable communicating and participating in this type of setting only then will they be motivated to complete a task. According to Chin (2014), when learners are motivated to solve a problem they want to continue to improve their final artifact even when that segment of learning was deemed complete. If students are intrinsically motivated, they are more likely to evolve into lifelong learners after compulsory school is completed.

Another possible solution to impact student motivation is to incorporate online video. Colleagues have shared with me that students usually learn information on their own

through video rather than reading. According to Cayari (2015), based on his survey, sixteen out of eighteen participants reported positive experiences of satisfaction by using video in the classroom. My design could be a viable alternative to a traditional education model because other studies show that students are satisfied with learning through video. Therefore, the purpose of this action research project was to explore the use of video to enhance cooperation among my students at a public school on ʻOahu.

Literature Review

For this research study, I have used the action research strategy to create, implement, and evaluate my design. Action research is a process of inquiry that helps refine an educator's actions so he or she can be more effective in the classroom (Sagor, 2000). Educators who constantly reflect on their weaknesses, and take action, can strive to become more effective in the classroom. Furthermore, action research allows teachers to deeply understand their own pedagogy and improve their teaching practice in a tangible way (Carson, 1990). In my classroom, one of my weaknesses is effectively implementing group work between students. This research project allowed me to explore different frameworks like the constructivist theory and project based learning to assist me in designing cooperative environments.

Constructivist Theory. The overarching theory that encompasses cooperative learning is called the constructivist theory. One facet of the constructivist theory is called project based learning. According to Chin (2004), project based learning enhanced student collaboration among his students. In this study, the findings conclude that student groups worked efficiently and effectively and positively made an effort to complete project tasks. Also, frequency words were collected from observations and revealed that his learners valued collaboration. It provided learners with opportunities to express their opinions and allow students to divide up large amounts of work (Chin, 2014). Although the research did not clearly state how to design cooperative spaces, the author did include suggestions for teachers. This included encouraging student communication that focuses on management of tasks. This helped inform my design because I created roles and responsibilities so that task management is efficient in cooperative environments.

Cooperative Learning Environments. Another facet of the constructivist framework is cooperative learning environments. These environments help students effectively work together to achieve a goal. According to Johnson and Johnson (2014), cooperative learning environments are beneficial to students. For these environments to flourish, students must adopt an interdependence mindset. This is when individuals perceive that they can reach their goals only if other people are cooperatively linked to reach that same goal. Positive interdependence results in greater psychological health and positive social relationships between students. I incorporated this idea into my design by explicitly teaching students why interdependence is needed for cooperative settings to flourish.

Technology in Cooperative Learning Environments. Literature has also revealed that cooperative environments can flourish if technology is used in a thoughtful manner. According to Johnson and Johnson (2014), if technology is used effectively it can draw students together in cooperative environments. Their findings show that oftentimes people assume that technology isolates students, but it can dramatically change the way students interact with each other. The content that is learned from video can be a shared experience where students can discuss the content they have learned. Therefore, the medium that I have chose to teach cooperative learning was through online video. According to Clossen (2018), complex topics should be segmented into simple and comprehensible chunks to avoid immense student cognitive load. The chapters that are located on my website, are segmented deliberately so younger learners can understand the material.

Methodology

With student engagement in mind, I have created an instructional design module to increase the amount of cooperative interaction in my classroom. My design focused on the affective domain because the goal of this project was to influence student motivation and engagement in school.

Research Questions/Goals. The proposed design was developed to answer the following questions:

1. How will the use of video effect student cooperation for my 7th grade students at Highlands Intermediate School?

2. How will video effect the intrinsic motivation of my 7th grade students at Highlands Intermediate School?

As a classroom teacher, I am required to implement the Hawai'i state curriculum standards called the Common Core State Standards (CCSS). The basis for my design is connected to this standard: "Students will be able to engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly" ("Language Arts Grade 7 Common Core Standards") Therefore, the goal of this project was to develop a curriculum that focused on explicitly teaching cooperation skills in the classroom.

Content Analysis. The terminal objective of the instructional hierarchy was to have students effectively participate in cooperative settings (Appendix A). This hierarchical analysis flows from the bottom to the top. With the defined concepts located at the first level, concepts at the second level, and rules at the third level.

The first level boxes represent defined concepts that need to be learned before moving onto more advanced concepts. In my video design, the first chapter focused on defining cooperation, and the second and third chapters focused on defining transactive statements.

The second level of boxes illustrates concrete concepts that students needed to know in order to learn the rules. This part of my design teaches the viewer different types of transactive statements. The video states four different transactive categories: Building upon what others say, clarifying, disagreeing, and expressing an opinion. Next, students identified team roles and team norms.

The third level of boxes represents the set of rules that the learner must know to achieve the terminal objective. In my videos, I have provided the viewer with a scenario in which they will have to choose the appropriate language statement to use in that specific setting. Furthermore, after students chose their role, they learned about their responsibilities and how to contribute to the team. Finally, the red box represents the terminal objective where the viewer can combine their knowledge of cooperative language, roles, and norms to participate effectively in cooperative settings.

The instructional hierarchy has progressed through many iterations before it's final design (Appendix A). Many subject matter experts (SMEs) commented that I revise the initial content analysis (Appendix B) into manageable chunks for middle school students. The SMEs suggested that I explicitly teach cooperation. They also pointed out that students would not have the time to achieve a polished video in the time frame of this project. The SMEs recommendations were accurate and students need more time to learn essential video production concepts before using Flipgrid.

Evaluation Instruments. The instruments created to gather data were the observation protocol and retrospective survey. The protocol measured the amount of student behavior in cooperative settings. The survey evaluated my student's motivations and attitudes about cooperative learning environments. Due to video nature of my project and working with children, I did not obtain IRB approval. Therefore, my collected data and analysis is reported in a separate unpublished paper.

The retrospective survey was created on the Google Form application (Appendix C). It assessed student's experiences in cooperative learning environments before and after the learning segment. The Keller's ARCS Model was used to create these survey questions which focused on student's attitude, relevance, confidence, and satisfaction with the instructional module and cooperative environments. All questions were connected to clear objectives (Appendix D). The observation protocol (Appendix E) was created to evaluate student on-task and off-task behavior in cooperative settings.

Based on feedback from classmates, I have learned that the indicators used for my observation protocol need to be revised. One indicator stated that 'not talking' constituted off task behavior. But, this could mean that students are thinking of what to say. One recommendation for improvement is to develop more accurate indicators for off-task behavior in the observation protocol.

Project Design. In my design project, I created an instructional module that consists of six chapters (Figure 1). Each chapter contained an instructional video connected to the topic of cooperation. The topics included: defining cooperation, cooperative language, student

scenarios, team rules, team roles and responsibilities, student strengths, and planning the team video.

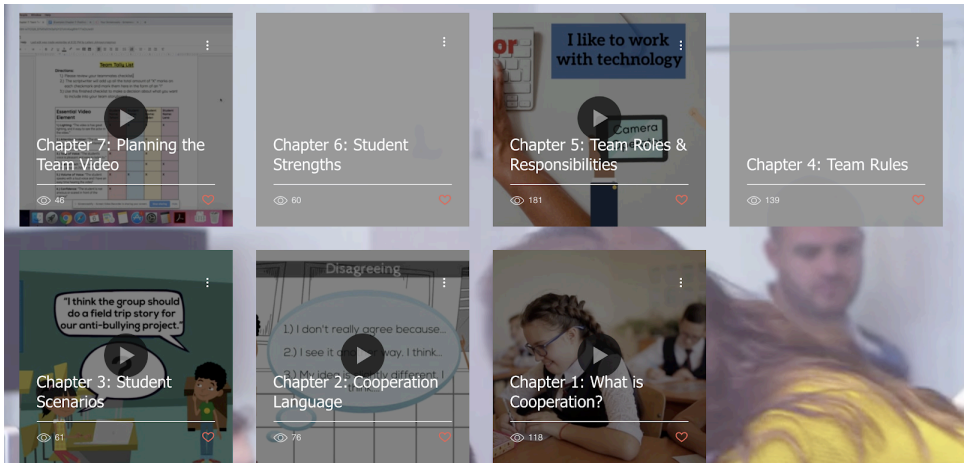

Figure 1. Instructional Modules

The curriculum was appropriately scaffolded for the young teenage learners. On the website, Chapters 1-6 were designed to prepare young people to participate in cooperative spaces (Appendix F). In addition, each chapter was organized in the same format, which included a learning objective, directions, video, and an external link to a formative assessment. The consistency with the website format was designed to help students be confident with using technology and learn the content.

The first chapter focused on defining cooperation by breaking down the idea of positive interdependence. According to Johnson & Johnson (2009), positive interdependence is crucial element for cooperation to work. This is when a person believes that they can achieve their goals only when they believe all of their team members are also invested into reaching that same goal. In the first chapter introduced the definition of cooperation and interdependence through a video I created using the website called WeVideo (Figure 2).

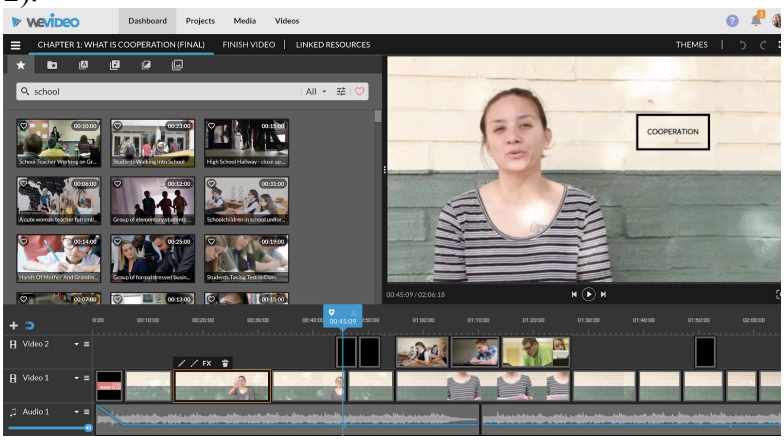

Figure 2. WeVideo Editing Software

Next, Chapter 2 focused on cooperative statements (Figure 3). According to Jurkowski and Hänze (2015), transactive communication is specific language statements in which

someone can say in cooperative settings to interlink their idea with another teammate's idea. It is shown that transactive statements positively affect the progression of cooperation in a group setting. Based on this research, I have created four categories, which include but not limited to: building upon what others say, clarifying, questioning, and disagreeing. These instructional videos teach the viewer specific statements to say in each of these categories.

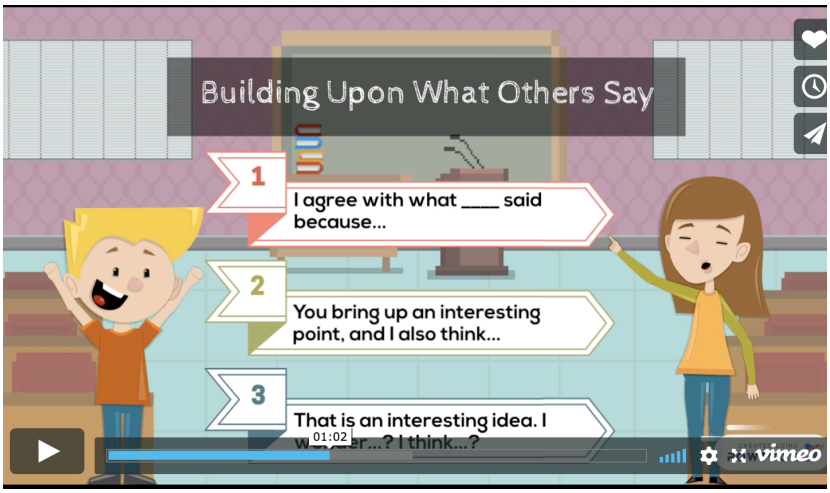

Figure 3. Transactive Statements

After students learned about transactive statements, students viewed fabricated scenarios in Chapter 3. In this chapter, the viewer's task was to discern the correct transactive statement to be used in a specific situation. In this video, two animated students were speaking to each other. According to Zengin and Tatar (2017), they recommend that an educator settle disagreements in the group. Therefore, I have included a student scenario showcasing two fictitious students who are "disagreeing" and showing the viewer how they can diffuse the situation (Figure 4). This chapter was designed to have students apply their knowledge of transactive statements into a fictitious setting.

Figure 4. Student Scenario

In the fourth chapter, students viewed my created video and learned about group norms or rules. According to Schoor, Narciss, and Körndle (2015), the social environment supports a person's internalization of behaviors. Therefore, being held accountable to group rules in cooperative settings is essential because people learn to internalize their actions by watching others.

The fifth chapter of the website outlined the different roles and responsibilities that make cooperative learning environment effective. Since the goal of my design was to have people effectively participate in cooperative settings, I have chosen 4 different roles that are conducive towards building a video. The roles consist of: actor, technology coordinator, director, and scriptwriter. Next, I explained what the responsibilities are for each role.

The combination of cooperative statements, roles, and responsibilities should successfully prepare the viewer to participate in cooperative settings. Research shows that students who are provided with structure and direction are more involved in cooperative learning settings. Students are more likely to help their classmates with tasks than an unstructured group (Gillies and Ashman, 1981 as cited in Senchibaugh and Senchibaugh, 2016, p. 361). After the learning segment, student should be able to use the knowledge that they have gained from the instructional videos and apply them in cooperative settings.

This project evolved and changed through the design process. I learned the importance of eliciting feedback and iterating my project. I received feedback from subject matter experts in the field of video design stating that I should re-shoot my initial videos due to poor lighting and talking speed. I also received feedback from my critical friends in regards to my video scripts. There were many grammatical errors that I revised including multiple pronoun changes.

Technology. A variety of digital technology was utilized to create this design. First, a Canon 80D camera and a tripod were used to record talking head style videos. These videos were recorded on a school campus, where I recited a script from memory. Next, a variety of video editing software was used to create videos including: Powtoons and WeVideo. Both of these software websites was chosen to edit my videos because they had an option to save to the cloud. Powtoons was used to create the animation videos as it does appeal to younger audiences. (Appendix G) Furthermore, with the use of animation the viewer can focus on the content of video rather than creating assumptions about actual human actors. Also, WeVideo allowed me to use B-roll video and music that was non-copyrighted material. Finally, the website Vimeo was used to export video from WeVideo. Then, it was uploaded onto a Wix website (Appendix F) into its respective chapters.

Discussion

Educators frequently express that students rush through learning activities in their classroom without deeply learning content. One possible solution that I created was the

use of video to raise student motivation and engagement. Overall, the concept of interdependence is the foundational piece that all other cooperative elements were built upon. Based on feedback from my classmates and subject matter experts, interdependence is a complex and abstract concept that takes time to build. My recommendation to researchers would be to spend a substantial amount of time designing learning spaces that focus on defining and practicing interdependence. Before starting this project, I assumed that students already knew how to act, how to behave, and what to say in cooperative settings. But, students need to learn these skills to effectively participate in cooperative settings. Another recommendation for future researchers would be to focus a substantial amount of time explicitly teach skills needed to be successful in cooperative settings. Students need to be afforded multiple opportunities to work with others in a low-risk environment and slowly build to higher-risk activities. Hopefully, if students are intrinsically motivated to learn, they will be able to realize the deeper meaning of what it means to cooperatively work together. If students value this concept, they can transfer it to other academic settings. But more importantly they can apply it to their interpersonal relationships that lay beyond the classroom walls.

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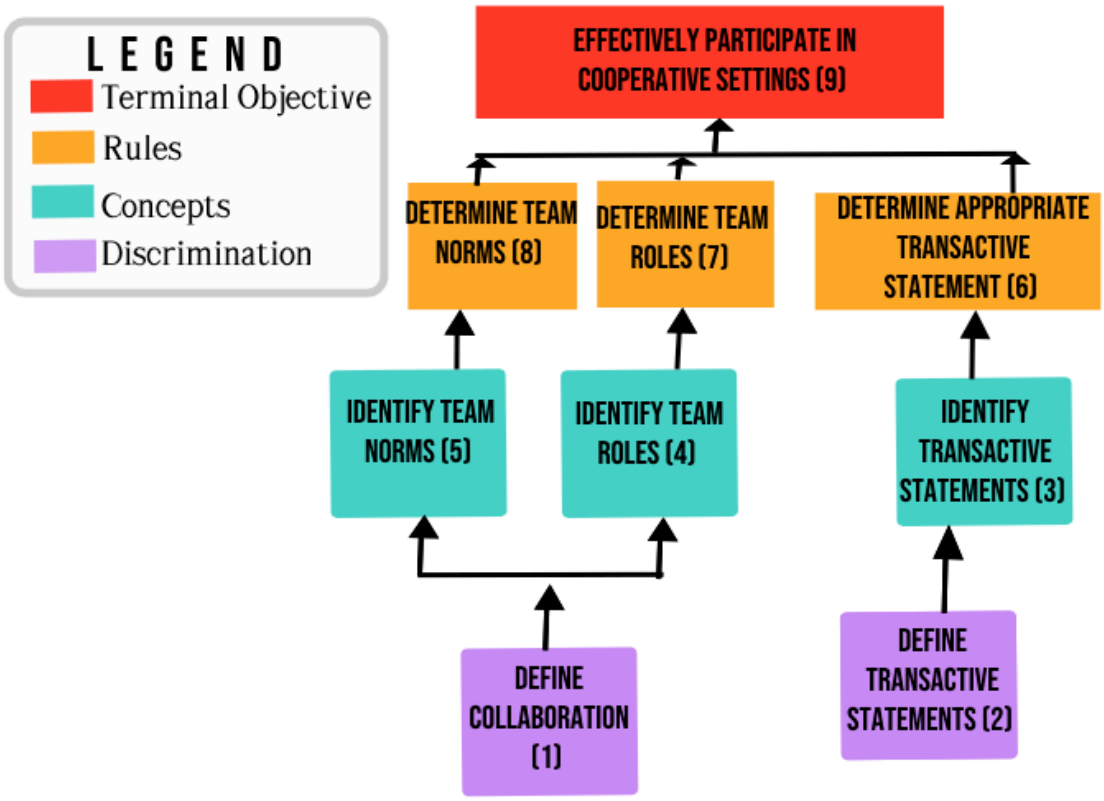
Appendix A
Content Analysis



Appendix B
Initial Content Analysis

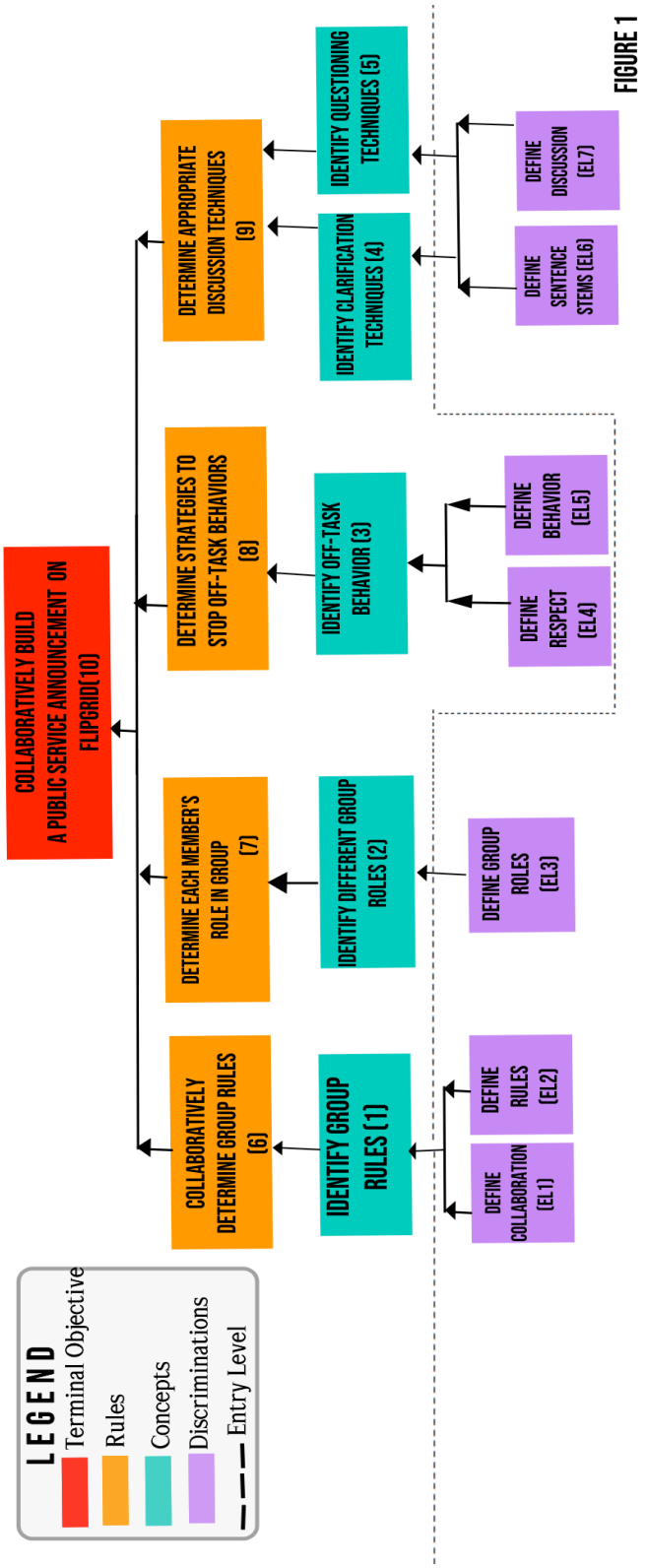


FIGURE 1

Appendix C
Retrospective Survey

Public Service Announcement Project Survey
Preliminary Questions:
Directions: You will be taking a voluntary survey to assess your feelings in working with your classmates. Remember that this survey is entirely voluntary, and if you do not wish to take the survey you can choose to exit this Google Form now. Remember to be honest in your answer selections. * Required

Preliminary Questions:
1. Have you created videos in your previous elementary school classes? *
Mark only one oval.
Yes
No

2. Have you created videos in other classes at Highlands Intermediate? *
Mark only one oval.
Yes
No

3. Before the PSA unit, did you have the opportunity to participate in group work in another class? *
Mark only one oval.
Yes
No

4. Do you watch videos online? *
Mark only one oval.
Yes
No

4a. If you answered yes, how many hours a week do you watch videos online? *
Mark only one oval.
1-2 hours
3-4 hours
5-6 hours
6 hours or more per week
N/A
Other:

Survey Questions:
Directions: Next, you will be taking a voluntary survey to assess your feelings in working with your classmates. Remember that this survey is entirely voluntary, and if you do not wish to take the survey you can choose to exit this Google Form now. In these questions please rate the answer on a scale of 1-5. The number 1 will represent strongly disagree

and the number 5 will represent strongly agree. Please select only one oval per question.

Question 1: Working with my classmates made me realize
that people have different ideas than me. (A)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 2: Working with my classmates helps me learn
about a topic better. (A)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 3: I feel that my ideas that I shared to my team really
made an impact on the final outcome of the project. (R)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 4: I feel that the cooperative language really helps
me communicate. (C)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *

Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 5: I am happy that I have opportunities to participate in group work in school. (C)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 6: I believe that we created a better project working as a team. (C)
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 7: I enjoy working with my classmates. (S)
18. A.) Before the PSA unit... *
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 8: I want to contribute my ideas to the group because I feel like it will help make better assignment (S).
A.) Before the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

B.) After the PSA unit... *
Mark only one oval.
1 2 3 4 5
Strongly Disagree Strongly Agree

Question 9: Do you prefer to work in a cooperative setting or on your own? Give TWO specific reasons.
Open-Ended Question*

Appendix D
Objectives

Attention

1. To increase student awareness that working together as a team is beneficial to learning.
2. To increase student awareness that their classmate's have different points of view.

Relevance

1. To increase the student's belief that their language can make an impact on a group's final product.
2. To increase the student's belief that their behaviors in cooperative environments can be replicated in different classes other than English Language Arts.

Confidence

1. To increase the student's confidence that they are capable of cooperating with others in a group setting.
2. To increase the student's belief that cooperation can result in a better product than individual efforts.

Satisfaction

1. To increase the student's enjoyment in being involved in cooperative learning environments.
2. To increase the students fulfillment in contributing to a cooperative learning environment.

Appendix E

Observation Tool: Measuring Collaboration Using Video

Observer: _____ Course: _____ Dates: _____

Team Names	**ON-TASK BEHAVIOR (A)**				**OFF-TASK BEHAVIOR (B)**			
	A1	A2	A3	A4	B1	B2	B3	B4
Red (10 minutes)								
Yellow (10 minutes)								
Blue (10 minutes)								
Green (10 minutes)								
Orange (10 minutes)								
Purple (10 minutes)								

Collaborative Behavior (A)	**Non-Collaborative Behavior (B)**
1. Talking that is related to project 2. Asking clarifying questions 3. Asking probing questions 4. Expressing Opinions	1. Not Talking 2. Talking that is not related to project 3. Being defensive 4. Needs prompting

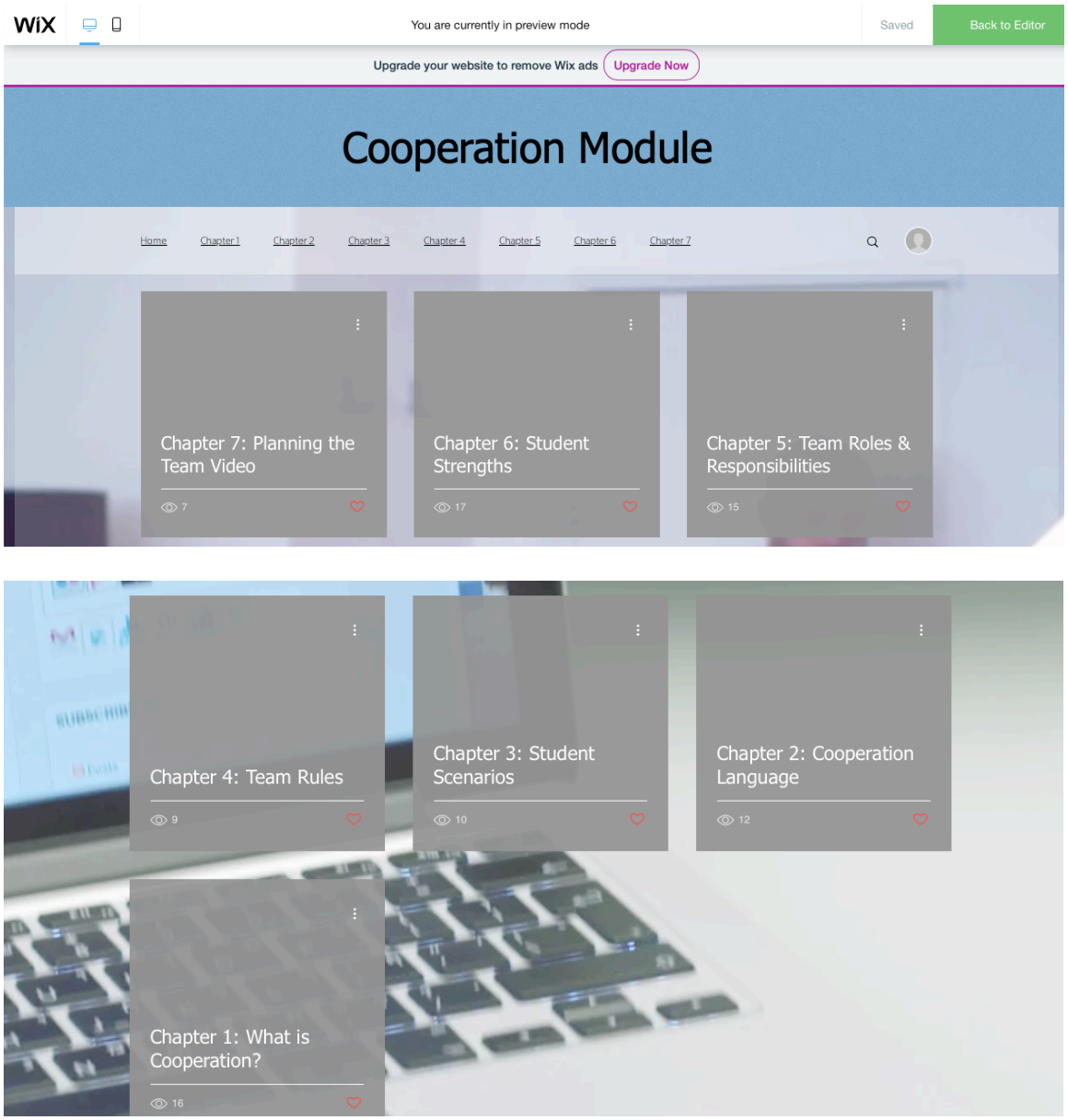
Students are collaborating when:

1) Students are discussing ideas that is related to the PSA project
2) Students ask clarifying questions to other classmates
3) Students are asking questions to probe their classmates to further discuss ideas
4) Students willingly express their opinions

Students are not collaborating when:

1) Students do not speak
2) Students talk about topics that are not related to the PSA project
3) Students are defensive by negatively responding to other's ideas
4) Students speak their opinions when prompted by teacher

Appendix F
Screenshot of Wix Website



Appendix G
Powtoons